CALIFORNIA ENERGY COMMISSION
1516 NINTH STREET
SACRAMENTO, CA 95814-5512

December 8, 2006

Margaret Fitzgerald
Panoche Energy Center
URS Project Manager
2020 East 1st Street, Suite 400
Santa Ana, CA 92075

Dear Ms. Fitzgerald,

PANOCHE ENERGY CENTER POWER PLANT PROJECT (06-AFC-5) DATA REQUESTS

Pursuant to Title 20, California Code of Regulations, section 1716, the California Energy Commission staff requests the information specified in the enclosed data requests. The information requested is necessary to: 1) more fully understand the project, 2) assess whether the facility will be constructed and operated in compliance with applicable regulations, 3) assess whether the project will result in significant environmental impacts, 4) assess whether the facilities will be constructed and operated in a safe, efficient and reliable manner, and 5) assess potential mitigation measures.

This set of data requests (#1-60) is being made in the areas of air quality, biological resources, cultural resources, geological resources, land use, noise, socioeconomics, soil and water resources, visual resources (plume), and waste management. Written responses to the enclosed data requests are due to the Energy Commission staff on or before January 9, 2007, or at such later date as may be mutually agreed.

If you are unable to provide the information requested, need additional time, or object to providing the requested information, you must send a written notice to both Commissioner Jeffery Byron, Presiding Committee Member for the Panoche Energy Center Power Plant Project, and to me, within 10 days of receipt of this letter. The notification must contain the reasons for not providing the information, the need for additional time, and the grounds for any objections (see Title 20, California Code of Regulations, section 1716 (f)).

If you have any questions, please call me at (916) 653-1245, or E-mail me at jreede@energy.state.ca.us.

Sincerely,

James W. Reede, Jr., Ed.D.
Energy Facility Siting Project Manager

Enclosure
cc: POS

PROOF OF SERVICE (REVISED _____) FILED WITH
ORIGINAL MAILED FROM SACRAMENTO ON 12/8/06

Panoche Energy Center Project
Data Requests
(06-AFC-5)

Technical Area: Air Quality
Author: William Walters

Air Quality Permit Application

BACKGROUND

The proposed project will require permits (the Preliminary Determination of Compliance and Final Determination of Compliance) from the San Joaquin Valley Air Pollution Control District (SJVAPCD or "District"). These permits are integrated into the staff analysis. Therefore, staff will need copies of all correspondence between the applicant and the District in a timely manner in order to stay up to date on any permit issues that arise prior to completion of the Preliminary or Final Staff Analysis.

DATA REQUEST

1. Please provide copies of all substantive District correspondence regarding the PEC permit application, including e-mails, within one week of submittal or receipt. This request is in affect until the final Commission Decision has been recorded.

Operating Emissions and Revised Emission Limits

BACKGROUND

Staff is aware that the applicant has revised the emission limits for PM10 from the turbines among other changes they provided to the District for the District's determination of a complete application. Staff needs copies of all of these revisions in order to assess the project impacts. Additionally, the status of the proposed Best Available Control Technology (BACT) ammonia slip concentration needs clarification due to inconsistent BACT level notations in the AFC.

DATA REQUEST

2. Please provide revised project emission tables that incorporate all proposed changes to the gas turbine and emergency engine emissions. The tables with revised emission values would likely include: Table 5.2-12, Table 5.2-13, Table 5.2-14, Table 5.2-15, Table 5.2-21, Table 5.2-24, and the tables provided in Appendix I, Attachment C.

3. Please provide any other revised project information that was provided to the District but not included in the October 30, 2006 AFC Supplement.

4. Please update as necessary any modeling files with emissions affected by these proposed changes; combine the receptors and multiple year meteorological files to reduce the number of modeling runs by a factor of ten.

5. The ammonia slip emissions estimate provided in Appendix I provides emissions based on both 10 ppm, identified as T-BACT and 6 ppm, identified as BACT. However, Section 5.2 of the AFC indicates ammonia slip BACT to be 10 ppm. Please confirm which level is proposed as BACT, and if 10 ppm is proposed please explain why Appendix I provides calculations for 6 ppm slip.

Panoche Energy Center Project
Data Requests
(06-AFC-5)

Startup and Shutdown Emissions

BACKGROUND

The requested startup and shutdown emission limits appear to be higher than that being requested for similar turbines currently being licensed. These higher startup emissions impact the quarterly and annual emissions and resulting need for emission offsets. Staff needs additional information regarding the startup/shutdown emissions estimate.

DATA REQUEST

6. Please explain why the startup and shutdown emission levels indicated in Table 5.2-13 are significantly different than the startup/shutdown estimates provided for the Walnut Creek Energy Park (05-AFC-2), Sun Valley Energy Project (05-AFC-3), and Highgrove (06-AFC-2) that also will use the GE LMS100 turbines.

7. For unsteady state operations, Table 5.2-13 in the AFC shows an initial startup period of 10 minutes, an additional warm-up period after initial startup of 20 minutes needed to completely warm-up the SCR system, and a 10.5 minute shutdown. The delineation of these unsteady state operations and the emissions assumed for these unsteady state operations are considerably different than those for the Walnut Creek Energy Park (05-AFC-2), Sun Valley Energy Project (05-AFC-3), and Highgrove (06-AFC-2) that also will use the GE LMS100 turbines. Please explain why the warm-up and the shutdown emission rates are higher for NOx, CO, and SO2 and lower for VOC and PM10 than the startup emission rates. The difference in the emission rate direction of the SO2 and PM10 emission rates, which are both generally based on fuel flow, are of particular interest.

Initial Commissioning

BACKGROUND

Staff requires additional information regarding the initial commissioning tests in order to evaluate the initial commissioning impact analysis. Specifically, exhaust parameters for each test are needed to examine the worst-case commissioning test.

8. Please provide the expected exhaust parameters (temperature and velocity) for the six specific initial commissioning tests identified on page 5.2-19 of the AFC.

Operating Emissions Dispersion Modeling

BACKGROUND

Staff needs additional information regarding the operating cases used for the dispersion modeling analysis. Some of the modeling inputs selected do not seem to match realistic operating cases and appear to use inconsistent modeling parameter inputs.

DATA REQUEST

9. The operating cases modeled are conservative, but seem unrealistically conservative. Please provide brief but specific explanations of the source of the emission input assumptions and the stack parameter (temperature and velocity) input assumptions for each of the pollutant/averaging time modeling scenarios presented. Also, please identify whether any multipliers were used to account for the maximum proposed annual operations limit of 5,000 hours.

Emission Offsets

BACKGROUND

The applicant's proposed offset package still contains some uncertainties regarding all of the emission reduction credits (ERC) that are going to be used for the project. These uncertainties include; the exact amount used from each ERC source, and the offset ratios required for each ERC source including interpollutant offset ratios. Staff requires a finalized offset package to complete our analysis.

DATA REQUEST

10. Please provide a tabulated list showing quarterly emission and emission offset accounting indicating the proposed quantity used quarterly from each ERC source to fully offset the project's emissions. Please show the current updated ERC certificate number and former certificate number for all certificates that have been recently split and/or re-issued in the name of the project.

11. Please provide correspondence with the District indicating that they have accepted the proposed SO2 for PM10 interpollutant offset trading ratio at least one month prior to the publication of the Preliminary Staff Assessment.

Construction Emission Calculations

BACKGROUND

The construction emission calculations are not complete for the proposed site. The Urban Environmental Management Information Software (URBEMIS) construction emission modeling files use assumptions that are inconsistent with those otherwise provided in the AFC documentation and are not set up in a manner to estimate all of the construction emissions nor properly estimate the fugitive dust emissions. Additionally, PM2.5 emissions have not been estimated. The construction emission calculations need to be revised and improved to include all activities and provide reasonable assumptions for the emission estimates.

Please note that while the District may have identified URBEMIS as an approved method for determining construction emissions, it is the Energy Commission who evaluates construction emissions and Commission staff prefers a more site specific estimating approach than is possible by using URBEMIS. The emission factors and estimating methods identified for onroad and offroad equipment on the South Coast Air Quality Management District (SCAQMD) website,

along with the use of US Environmental Protection Agency (USEPA) fugitive dust emission calculations for actions not included on the SCAQMD website (such as unpaved roads and paved roads) would be considered an acceptable alternative approach to updating the URBEMIS modeling runs.

BACKGROUND

The construction emission calculations do not include an estimate of the emissions from the pomegranate tree removal (i.e. site demolition) and do not include an estimate of emissions from onsite well drilling noted to be required in the AFC.

DATA REQUEST

12. Please provide emission estimates for these two construction activities and indicate if they will overlap the schedule for any of the other construction activities.

BACKGROUND

The Geotechnical report, Appendix L of the AFC, appears to indicate very fine soils at and near the surface of the site. In order to determine potential impacts, more information regarding the initial site grading operations are needed.

13. Please describe how much of the surface soils will need to be removed, and how much will have to be excavated and recompacted, and describe the final disposal for the removed soils.

BACKGROUND

The Geotechnical report provides “-200” notations in the bore logs.

DATA REQUEST

14. Please identify if these notations provide “smaller than 200” sieve percentages based on actual sieve results or are visual estimates, or whether they note something else entirely.

BACKGROUND

The basis for the pipeline and substation construction emissions data is unclear, and the pipeline construction modeling only includes fugitive dust emissions.

DATA REQUEST

15. Please provide the equipment and fugitive dust assumptions for both the pipeline and substation construction phases and indicate whether either of these two construction activities would overlap the schedule for other onsite construction activities.

BACKGROUND

It is assumed that emulsified diesel fuel is used in the URBEMIS model runs. This mitigation method is not mentioned in other areas of the AFC.

DATA REQUEST

16. Please confirm that emulsified diesel is proposed for construction, or revise the URBEMIS modeling runs appropriately.

BACKGROUND

There are problems with the URBEMIS model that cause fugitive dust emission mitigation efficiency to be grossly overestimated. In the case of the URBEMIS model runs provided with this estimate, the overall mitigation efficiency for fugitive dust control is over 94 percent even though no single fugitive dust operation would be controlled by more than 70 percent with the given inputs.

DATA REQUEST

17. Please provide an appropriate correction for the fugitive dust mitigation efficiency overestimate by URBEMIS considering the applicant's proposed fugitive dust mitigation measures.

BACKGROUND

Several other URBEMIS model inputs appear to be problematic. For example: 1) the fugitive dust basis uses non-conservative default model values when the site is known to have particularly fine soils and when the large cut and fill quantities are known; 2) soil handling values are left blank even though it is noted there will be significant removal of onsite soils and import of 60,000 cubic yards of fill required at the site; 3) the activity start and end dates do not appear to match the calendar years for the construction schedule otherwise provided in the AFC; and 4) the construction equipment types, numbers, horsepower differ from those presented in Appendix I Attachment B .

DATA REQUEST

18. Please review all of the modeling inputs, correct as necessary based on this request and other applicable data requests using URBEMIS or an alternative more site specific emission estimating approach and resubmit the construction emission estimates.

BACKGROUND

It is unclear from the simplified onroad vehicle emission calculation method whether the worst case day and annual onroad emissions are correctly estimated. There are likely to be three activities or construction periods that would require significant numbers of heavy truck trips. The first would be the pomegranate tree removal, the second would be the soil removal and fill import during initial grading and the third would be during the major concrete pours required during facility construction.

DATA REQUEST

19. To confirm these estimates, please identify the maximum number of daily heavy vehicle trips and VMT for these three construction peak periods and the total number of heavy vehicle trips, by type and assumed round trip locations, needed for all construction activities.

20. Please identify the final disposal option that will be used for the pomegranate trees removed from the site. If that option will create emissions concurrent to the project construction or operation (such as stockpiling, drying and later burning onsite) please provide an estimate of the tree waste disposal action emissions.

21. Please provide a PM2.5 emission estimate for construction. For engine emissions please either assume 100% of engine particulate emissions are PM2.5 or use approved California Air Resources Board (CARB) California Emission Inventory Development and Reporting System (CEIDARS) particulate size speciation profiles. For fugitive dust emissions please use approved CEIDARS particulate size speciation profiles.

Construction Dispersion Modeling

BACKGROUND

The construction dispersion modeling files appear to have errors, there are missing files, and inconsistencies in the input files versus the assumptions provided elsewhere in the AFC. Staff needs these apparent errors and inconsistencies corrected or explained, and needs copies of the missing modeling files. The construction schedule assumption in the emission calculations shows construction will occur eight hours a day; however, the modeling files do not use hourly emission factors and assume emission occur around the clock at reduced hourly levels. This will likely underestimate the short-term impacts (1-hour and 8-hour impacts particularly). Additionally, even these around the clock values do not match the construction emission levels provided elsewhere in the AFC.

DATA REQUEST

22. Please rerun the model using appropriate hourly emission factors for the hours in the day assumed for construction and provide revised results. Also as noted previously please combine receptors and meteorological files to reduce the number of modeling runs by a factor of ten.

BACKGROUND

The AFC notes that the ozone limiting method (OLM) is used for certain 1-hour impact determination. However, no NOx_OLM modeling files or simplified OLM method calculation are provided to confirm the results presented for 1-hour NOx impacts.

23. Please provide the NOx_OLM input/output files, including ozone input files, if NOx_OLM was used, or provide the simplified OLM calculations and assumptions if that method was used to determine worst case 1-hour NOx impacts. Please note that other modeling corrections may be necessary based on the previous data request and the other data requests regarding construction emission estimates.

Dispersion Modeling Files – Incorrect File Names

BACKGROUND

The dispersion modeling files appear to have inconsistencies in file names. To perform a complete analysis, staff needs these apparent errors/inconsistencies corrected or explained. The modeling output files indicate errors in linking the correct emission inputs. For example the "East Const Jul8_87_PMST.LST" file does not have the correct emission sources or emission levels for PM10 listed and appears to be a NOx modeling run.

DATA REQUEST

24. Please provide corrected modeling runs or provide corrections for the modeling file names when not rerun as necessary to respond to other data requests.

Cumulative Modeling Analysis

BACKGROUND

To complete the staff analysis, a cumulative modeling analysis, performed as described in the Appendix I, Attachment D modeling protocol (page 4-8), needs to be completed by the applicant and submitted prior to the Preliminary Staff Analysis.

DATA REQUEST

25. Please provide a copy of the District's correspondence regarding existing and planned cumulative projects located within six miles of the PEC site.

26. Please provide the cumulative modeling analysis, including the nearby Calpeak and Wellhead Energy peaker sites as proposed in the modeling protocol, as well as all District identified cumulative sources and the recently proposed Starwood Power-Midway Peaking Project (06-AFC-10).

Panoche Energy Center Project
Data Requests
(06-AFC-5)

Technical Area: Biological Resources
Author: Joanna Grebel

BACKGROUND

The location for the proposed Panoche Energy Center is in the historical range for the state and federally endangered San Joaquin kit fox (*Vulpes macrotis mutica*). The AFC states (Sec. 5.6.1.5.2, pg. 5.6-8) that the nearest California Natural Diversity Database (CNDDB) record of the San Joaquin kit fox is 2.2 miles west of the project area. The AFC does not include consultation letters from the U.S. Fish and Wildlife Service (USFWS) or the California Department of Fish and Game (CDFG) discussing potential impacts from the proposed project to the state and federally endangered San Joaquin kit fox.

DATA REQUEST

27. Please provide any supporting documents (letter or record of conversation) that resulted from communication with USFWS and CDFG regarding potential impacts to the state and federally listed San Joaquin kit fox. Please provide contact information for the USFWS and CDFG staff.

Panoche Energy Center Project
Data Requests
(06-AFC-5)

Technical Area: Cultural Resources
Author: Beverly E. Bastian

BACKGROUND

The discussion of planned excavation and filling for the proposed Panoche Energy Center (PEC) describes considerable earthmoving at the proposed plant site, and the AFC states that trees and top soil will be removed and construction will be one to three feet above existing grade (AFC p. 3-33). Staff needs more information on the potential for PEC project impacts to cultural resources in the disposal and borrow sites that would be used.

DATA REQUESTS

28. If off-site disposal and borrow sites are not commercial operations and consequently have not been surveyed for cultural resources, please conduct such surveys and provide the personnel qualifications, methods, and findings to staff.

BACKGROUND

The AFC states that there are two natural gas pipeline routes, a preferred and an alternate (p. 3-40). These two routes are not shown on the map indicated, and there is no detailed description of the alternate. Staff needs to know the location of the alternate natural gas pipeline route to fully assess the project's potential impacts on buried cultural resources.

DATA REQUEST

29. Please provide a map showing both proposed natural gas pipeline routes and a detailed description (with depth and width measurements) for the alternate route.

BACKGROUND

The PEC project proposes to modify the existing Panoche Substation to accommodate the new interconnection between the proposed power plant and the substation. The AFC provides no information on the age of the Panoche Substation or its potential eligibility for the California Register of Historical Resources.

DATA REQUEST

30. If the Panoche Substation is 45 years of age or older, please have a qualified architectural historian complete Department of Parks and Recreation (DPR) 523 "Primary" and "Building, Structure, and Object" forms, including an evaluation of significance. Please have the qualified architectural historian also assess the project's potential impact on the substation, and provide the DPR 523 forms and impact assessment.

BACKGROUND

The applicant obtained contact information for six individuals or groups of Native Americans identified by the Native American Heritage Commission (NAHC) as having traditional ties to Fresno County. The AFC indicates that a letter describing the PEC and a map showing the location of the proposed project were sent to these Native Americans and that, up to the date of filing the AFC, representatives of three groups had responded, one by telephone (p. 5.7-9 and Appendix J). To ensure that the information the applicant sent was received, the NAHC requests that follow-up telephone calls be made to those Native Americans who did not respond after two weeks.

DATA REQUESTS

31. To verify that they have no concerns regarding cultural resources in the PEC project area, please telephone those Native American individuals or groups who have not yet responded to the informational letters that were sent out and provide summaries of the calls.

32. Please provide copies of any additional letters received from Native Americans since the AFC was compiled and a summary of the telephone call made to the Table Mountain Rancheria representative on June 30, 2006. If the location of archaeological sites may be revealed, please provide the responses under confidential cover.

BACKGROUND

The AFC notes that former Lake Tulare was near the location of the proposed PEC (p. 5.7-7), and the Cultural Resources Technical Report states that archaeological sites may be buried below Pleistocene and Holocene alluvium (Appendix J, p. 1-9). Staff needs more precise information about the relationship of the proposed site to this former body of water to assess the possibility of buried archaeological deposits.

DATA REQUEST

33. For the project region, please provide a map (at a scale of 1:24,000) showing the greatest extent of former Lake Tulare and its tributaries, and please mark on this map the location of the proposed PEC plant site.

Panoche Energy Center Project
Data Requests
(06-AFC-5)

Technical Area: Geological Hazards and Resources
Author: Patrick Pilling, Ph.D., P.E., G.E.

BACKGROUND

Information contained in the AFC greatly assists staff in the review and evaluation of a potential site. It appears as though the balance of information for Section 5.3.1.1.10, Page 5.3-13, has been omitted from the AFC text.

DATA REQUEST

34. Please provide the balance of the text omitted from Section 5.3.1.1.10.

BACKGROUND

Strong ground shaking associated with a design-level (i.e. maximum expected) earthquake is a key component in analyzing a site with respect to geologic hazards. Key to this analysis is selecting an appropriate peak bedrock ground acceleration. The AFC states in Section 5.3.1.1.8 on page 5.3-13 that a peak site acceleration of 0.363g will be experienced at the project site due to the maximum expected earthquake; however, the project geotechnical report contained in Appendix L states that a peak horizontal ground acceleration of 0.48g can be expected at this site for the design basis earthquake.

DATA REQUEST

35. Please clarify what value of peak horizontal ground acceleration is appropriate for this site.

BACKGROUND

Dynamic compaction of soils results when relatively unconsolidated granular materials experience vibration associated with seismic events. The vibration causes a decrease in soil volume, as the soil grains tend to rearrange into a more dense state (an increase in soil density). The decrease in volume can result in settlement of overlying structural improvements. The AFC states in Section 5.3.1.1.11 on page 5.3-16 that peak site accelerations at the site are unlikely to be high enough to produce settlement; however, the project geotechnical report contained in Appendix L states that seismic-induced settlement could occur within the loose to medium dense sandy and silty layers in the upper 40 feet based on design-level earthquake event, resulting in about 2 inches of settlement. Such settlement could impact operation of the facilities.

DATA REQUEST

36. Please clarify this discrepancy, and describe what impact this settlement may have on the operation of the proposed facilities, and how such impacts will be mitigated.

BACKGROUND

Partially saturated soils can possess bonds that are a result of chemical precipitates that accumulate under semi-arid conditions. Such soluble compound bonds provide the soils with cohesion and rigidity; however, these bonds can be destroyed upon prolonged submergence. When destroyed, a substantial decrease in the material's void ratio is experienced even though the vertical pressure does not change. Materials that exhibit this decrease in void ratio and corresponding decrease in volume with the addition of water are defined as collapsible soils. Collapsible soils are typically limited to true loess, clayey loose sands, loose sands cemented by soluble salts, and windblown silts. Since the site and proposed linear facilities are generally underlain by sands and silts that may satisfy the above criteria and since laboratory test results contained in Appendix L indicate collapse potential, the potential for hydrocompaction must be addressed.

DATA REQUEST

37. Please address the potential for site soils, in particular silts, to collapse when subjected to water, and how the impact will be mitigated.

BACKGROUND

Soil expansion occurs when clay-rich soils, with an affinity for water, exist in-place at a moisture content below their plastic limit. The addition of moisture from irrigation, capillary tension, water line breaks, etc. causes the clay soils to collect water molecules in their structure, which in turn causes an increase in the overall volume of the soil. This increase in volume can correspond to movement of overlying structural improvements. Surface materials present at the project site are expected to include clay soils. The AFC in Section 5.3.1.1.12 on Page 5.3-17 states that unusual expansive soil concerns are not likely at the site; however, the project geotechnical report contained in Appendix L states that the native clay soils are moderately expansive.

DATA REQUEST

38. Please clarify this discrepancy, what impact expansive soils may have on the operation of the proposed facilities, and how such impacts will be mitigated.

Technical Area: Land Use
Author: Amanda Stennick

BACKGROUND

As stated in the AFC, the parcel is under the Williamson Act. Implementation of the project required the applicant to submit an application to Fresno County to cancel 12.8 acres of the 128-acre parcel (contract #367) from the Williamson Act.

DATA REQUEST

39. For staff to complete evaluation of the proposed cancellation, please submit a schedule as to when Fresno County will process the cancellation application and when the Board of Supervisors will hear the cancellation application.

BACKGROUND

According to Section 66412.2 of the Subdivision Map Act which requires development projects' conformance with local zoning, the Williamson Act contract cancellation would not require a subdivision of the 128-acre parcel provided the project is subject to review for local agency ordinances regulating design and improvements.

DATA REQUEST

40. To conform to the requirements of Section 66412.2 of the Subdivision Map Act, please provide a plot plan that demonstrates the project's conformance with Section 816.5 (Property Development Standards) of the Fresno County Zoning Ordinance.

Panoche Energy Center Project
Data Requests
(06-AFC-5)

Technical Area: Noise
Author: Shahab Khoshmashrab

BACKGROUND

Energy Commission staff evaluates power plant operational noise impacts on sensitive receptors by comparing the noise levels at the receptor, with the power plant operating, to the ambient noise levels at the receptor before the project is constructed. Specifically, staff compares power plant noise to the background (L_{90}) noise levels at the receptor during the nighttime hours, when people are most likely to be annoyed by excessive noise. AFC Section 5.12.2.1.2 states that the project estimated operational noise levels (project, plus ambient during the quietest four consecutive hours of the nighttime) at the nearest noise-sensitive residential receptors ML1 and ML2, 52 dBA and 58 dBA, respectively, would exceed the Fresno County nighttime noise limit of 45 dBA.

AFC Section 5.12.2.1.2 also states that these estimated noise levels exceed the existing ambient noise levels by 10 dBA and 21 dBA at ML1 and ML2, respectively. This would create significant adverse noise impacts at these residences.

In order to ensure that the project will comply with the applicable local noise LORS (Noise Element of the County of Fresno) and that the project noise levels do not create significant adverse noise impacts at the nearest noise-sensitive receptors, the project operational noise levels shown above must be mitigated to meet these requirements. AFC Section 5.12.3, Mitigation Measures, states that the Applicant and the Applicant's engineers are assessing technically feasible noise mitigation measures including the possibility of removal of ML2 as a residence. In the AFC, however, the Applicant does not list the mitigation measures being considered, or specify the final numerical estimates for the project noise levels at these receptors after incorporating the effects of the additional mitigation measures considered. Neither does it commit to removal of ML2 as a residential use. In order to evaluate the project noise impact, staff needs to know the mitigation measures being considered, and the final noise level estimates for mitigation. As an alternative for ML2, staff needs to know if, in fact, the use of this location as a multi-family residence will be removed prior to the start of project operation.

DATA REQUESTS

41. Please provide the mitigation measures being considered and the final estimated project noise levels during operations at locations ML1 and ML2 after incorporating the effects of the additional noise mitigation measures into the noise calculations. As an alternative for ML2, state if, in fact, the use of this location as a multi-family residence will be removed prior to the start of project operation.

Panoche Energy Center Project
Data Requests
(06-AFC-5)

Technical Area: Socioeconomics
Author: Joseph Diamond Ph. D**.**

BACKGROUND

The time value of money should be reflected for all economic estimates. Staff needs to know the year that corresponds to the dollar estimate for evaluating the economic effects of the project.

DATA REQUEST

42. Please indicate the year for all economic estimates (e.g., school impact fees, construction and operation sales tax).

BACKGROUND

Substantial employment of workers for the PEC Project who may come from outside the study area of Fresno County, have the potential to cause a significant adverse socioeconomic impact, (i.e., housing, community services).

DATA REQUEST

43. Please provide an estimate of the percentage of the construction workforce that would be local, from Fresno County, and non-local.

BACKGROUND

Staff wants to better understand the economic benefits of the PEC Project.

DATA REQUEST

44. Please provide an estimate of the amount of sales tax paid by the owners of the project during construction and operation.

Panoche Energy Center Project
Data Requests
(06-AFC-5)

Technical Area: Soils and Water Resources
Author: Michael Stephens

BACKGROUND

The Panoche Project will use impaired, high total dissolved solids, (TDS) groundwater as a primary water source, through the drilling and construction of on-site wells. The hydrogeology appears to consist of an unconfined aquifer located above two separate confined aquifers; with one or both of the confined aquifers used for the project water supply. Site specific groundwater chemistry data that has been provided consists of TDS concentrations from the interpretation of geophysical logging conducted on borings completed at the site. Groundwater samples have been collected at the site; however, no analytical data has been provided.

DATA REQUEST

45. Please provide the results of laboratory analyses of groundwater, including TDS, for each of the three aquifers.

BACKGROUND

Two copies of hand drawn cross sections showing the relationship(s) of groundwater, geology, proposed groundwater production wells, and proposed injection wells were provided to CEC staff in a supplement to the AFC. The hand drawn cross-sections are very difficult to read and some parts are indistinct.

DATA REQUEST

46. Please provide the above mentioned cross-sections in standard engineering drawings of no smaller than 11 x 17 inches.

BACKGROUND

Groundwater production wells for the project are proposed to be completed from 1,000 to 1,350 feet below ground surface. Use of one or both of the confined aquifers is proposed for the project water supply. The upper aquifer, which appears to contain higher quality water, has historically been used, and could be used in the future if drought conditions occur, as a water source for agriculture and other uses. Monitoring wells were screened in each of these three aquifers, with the deeper of the confined aquifers unscreened to the bottom because of drilling difficulties.

DATA REQUEST

47. Please provide aquifer data for the groundwater production wells proposed for the project, and the effect(s) that these wells will have on the upper aquifer, as well as each of the confined aquifers. The vertical gradient for each aquifer should be presented as part of this analysis.

BACKGROUND

Two-inch diameter monitoring wells located at the site are too small to use submersible pumps for aquifer pump testing purposes. Therefore, regional groundwater parameter data was used to obtain an estimate of drawdown values that are anticipated in surrounding area wells as the result of project water supply demand. Although too small for pumping, the well diameters should be sufficient to conduct slug testing, which can also provide site specific aquifer data.

DATA REQUEST

48. Please evaluate slug testing as a means of obtaining site specific aquifer data. Slug test data would provide a better estimate of site specific aquifer parameters than those obtained from regional data sources that were used.

BACKGROUND

A deep well injection permit application for the disposal of waste water generated by the project has been submitted to the EPA. The permit application process takes approximately 10 to 12 months; with a target date of June, 2007 for issuance of the permit. The permit will allow the applicant to drill an exploratory boring at the site. If data from the exploratory boring supports construction of the injection system as a practical and geologically stable approach, the applicant will proceed with well drilling.

DATA REQUEST

49. Please provide an update on the EPA review of the permit application. Include technical comments from EPA as well as an updated schedule and timeline for permit approval.

50. In the event that data from the exploratory boring does not support underground injection as a means of waste-water disposal, please discuss alternative means of disposal.

Panoche Energy Center Project
Data Requests
(06-AFC-5)

Technical Area: Transmission System Engineering
Authors: Laiping Ng & Mark Hesters

BACKGROUND

The California Environmental Quality Act (CEQA) requires the identification and description of the "Direct and indirect significant effects of the project on the environment." The Application for Certification requires discussion of the "energy resource impacts which may result from the construction or operation of the power plant." For the identification of impacts on the transmission system resources and the indirect or downstream transmission impacts, staff relies on the System Impact and Facilities Studies as well as review of these studies by the agency responsible for insuring the interconnecting grid meets reliability standards, in this case, the California Independent System Operator (CAISO). The studies analyze the effect of the proposed project on the ability of the transmission network to meet reliability standards. When the studies determine that the project will cause a violation of reliability standards, the potential mitigation or upgrades required to bring the system into compliance are identified. The mitigation measures often include the construction of downstream transmission facilities. CEQA requires the analysis of any downstream facilities for potential indirect impacts of the proposed project. Without a complete System Impact and Facilities study, staff is not able to fulfill the CEQA requirement to identify the indirect effects of the proposed project. Staff is aware that the aforementioned studies are being revised by PG&E.

DATA REQUEST

51. Please provide the final System Impact Study. The Study should analyze the system impact with and without the project during peak and off-peak system conditions, which will demonstrate conformance or non-conformance with the utility reliability and planning criteria with the following provisions:
    a. Identify major assumptions in the base cases including imports to the system, major generation and load changes in the system and queue generation.
    b. Analyze system for N-0, important N-1 and critical N-2 contingency conditions and provide a list of criteria violations in a table showing the loadings before and after adding the new generation and all short circuit studies.
    c. Analyze system for Transient Stability and Post-transient voltage conditions under critical N-1 and N-2 contingencies, and provide related plots, switching data and a list for voltage violations in the studies.
    d. Provide a list of contingencies evaluated for each study.
    e. List mitigation measures considered and those selected for all criteria violations.
    f. Provide electronic copies of *.sav and *.drw PSLF files.
    g. Provide power flow diagrams (MW, % loading & per unit voltage) for base cases with and without the project. Power flow diagrams must also be provided for all N-0, N-1 and N-2 studies where overloads or voltage violations appear.
    h. Provide environmental information related to any mitigation identified in the studies.

Panoche Energy Center Project
Data Requests
(06-AFC-5)

Technical Area: Visual Resources - Plume
Author: William Walters

Cooling Tower Operating Data

BACKGROUND

Staff plans to perform a plume modeling analysis for the cooling tower. Staff requires additional cooling tower operating information to complete this analysis. Staff has found that the cooling tower designs for LMS100 turbine projects create higher plume frequencies than cooling tower designs for combined cycle projects. Staff must assess several of the design and operating parameters of the PEC cooling tower to confirm its visible plume frequency potential.

DATA REQUEST

52. Please summarize for the cooling tower the conditions that affect vapor plume formation including number of cells in operation, cooling tower exhaust temperature, and exhaust mass flow rate. Please provide values to complete the table, and additional data as necessary for staff to be able to determine how the heat rejection load varies with ambient conditions and also determine at what ambient conditions cooling tower cells may be shut down.

Parameter	Cooling Tower Exhausts		
Number of Cells	5 cells		
Cell Height*	12.8 meters (42 feet)		
Cell Diameter*	6.71 meters (22 feet)		
Tower Housing Length*	15.24 meters (151 feet)		
Tower Housing Width*	12.8 meters (42 feet)		
Ambient Temperature*	16.8°F	63.3°F	114°F
Ambient Relative Humidity	95.2%	76%	14.4%
Number of Cells in Operation			
Heat Rejection (MW/hr)	90.5	117.5	127.8
Exhaust Temperature (°F)			
Exhaust Flow Rate (lb/hr)			

*Ambient conditions and heat rejection, neglecting water makeup and blowdown, are based on the three heat balance cases provided in Appendix A of the AFC. Cell diameter and height are from the air quality modeling CD. Tower length and width are from AFC Table 3.4-1.

53. Additional combinations of temperature and relative humidity or curves showing heat rejection vs. ambient condition, if provided by the applicant, will be used to more accurately represent the cooling tower exhaust conditions. Please include appropriate design margins for the number of cells in operation, exhaust flow rate and exhaust temperature in consideration that the air flow per heat rejection ratio is often used as a Condition of Certification design limit.

54. Please provide the cooling tower manufacturer and model number information and a fogging frequency curve from the cooling tower vendor, if available.

55. Please confirm that under normal full load operation of the four turbines only four of the five cooling tower cells will be operating, as noted in Table 3.11.1 of the AFC. Also, please indicate under what ambient conditions that additional cooling tower cells may be shut down while still operating under full load for all four turbines.

56. Please confirm that the cooling tower fan motors will not have variable speed/flow controllers.

Visible Plume Modeling Meteorological Data

BACKGROUND

Staff will model the cooling tower plumes using previously formatted meteorological data for the years 1992 to 1997, excluding 1996, from Lemoore Naval Air Station (NAS) unless the applicant provides data from a more representative monitoring station. Please note that while this meteorological station is somewhat further from the site than Fresno it is considered more representative than Fresno due to being in a rural location like the project site and being on the Western side of the San Joaquin Valley like the project site.

DATA REQUEST

57. Please provide representative raw and formatted meteorological data for visible plume modeling, if desired. This meteorological data set must be reasonably determined to be from a more project representative site than Lemoore NAS and include at least 5 years of 95 percent or better complete data. Additionally, this data set must have all of the normal ISCST3 meteorological data parameters, plus the following formatted parameters: relative humidity, present weather, visibility, cloud cover, and ceiling height. As appropriate, the units (such as knots for wind speed) for each of the parameters must also be provided.

Cooling Tower/Plant Operating Schedule

BACKGROUND

This project is designed with specific assumptions regarding maximum hours of operation per quarter. Staff would like to integrate this operating schedule, or other reasonable worst-case operating profiles, into the reasonable worst-case assumptions developed for the plume modeling analysis. Staff needs additional information to understand the expected reasonable worst-case maximum quarterly operating schedule.

DATA REQUEST

58. Please indicate by quarter, or by day or day of week if desired, the hours of the day that the project would be expected to operate given the maximum quarterly operating

schedule of 1,100 hours in the first and second quarters, 1,200 hours in the fourth quarter, and 1,600 hours in the third quarter (AFC page 5.2-36).

59. Please indicate any other reasonable worst-case hourly operating profiles for this project that are supported by PG&E data on expected maximum future load demand for the life of the facility. Please provide all supporting PG&E reference materials for the referenced maximum hourly operating profiles.

Panoche Energy Center Project
Data Requests
(06-AFC-5)

Technical Area: Waste Management
Author: Ellie Townsend-Hough

BACKGROUND

The Panoche Energy Center will be located on a 12.8 –acre parcel. The parcel is currently in agricultural production with pomegranate trees. Common agricultural practices can result in residual concentrations of fertilizers, pesticides or herbicides in near-surface soil. To ensure that the concentrations of various chemicals do not pose a potential health risk or hazard, the project owners need to provide soil sampling of the parcel/project site.

The Phase I Environmental Site Assessment (ESA) did not identify any recognized environmental conditions thereby, eliminating the need for a Phase II ESA. Although a Phase II ESA is not required, because the property is used for agriculture and there will be a large amount of ground disturbances, to protect the workers and reduce/eliminate damage to the environment, the project owner should verify that no harmful concentrations of any contaminates will be encountered at the proposed project site.

DATA REQUESTS

60. Using the Interim Guidance for Sampling Agricultural Fields for School Sites (Second Revision, dated August 26, 2002) sponsored by the California Department of Toxic Substances Control, California Environmental Protection Agency, please identify agricultural chemicals used on the site and chemicals or metals of potential concern. The project owner should also sample for concentrations of arsenic and selenium in addition to the other chemicals. A minimum of eight composite samples should also be taken on half-acre centers. Although the guidance is listed as an “Interim Guidance...for School Sites,” DTSC uses the guidance for all types of commercial and industrial businesses constructed on agricultural properties. The guidance is intended to assist environmental assessors in designing initial investigation for sites with historical agricultural uses.

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA

APPLICATION FOR CERTIFICATION FOR THE PANOCHE ENERGY CENTER

Docket No. 06-AFC-5
PROOF OF SERVICE

INSTRUCTIONS: All parties shall 1) send an original signed document plus 12 copies OR 2) mail one original signed copy AND e-mail the document to the web address below, AND 3) all parties shall also send a printed OR electronic copy of the documents that shall include a proof of service declaration to each of the individuals on the proof of service:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 06-AFC-5
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DECLARATION OF SERVICE

I, Angela Hockaday, declare that on December 8, 2006, I deposited copies of the attached Data Requests for the Panoche Energy Center Power Plant Project (06-AFC-5), in the United States mail at Sacramento, California with first-class postage thereon fully prepaid and addressed to those identified on the Proof of Service list above.

OR

Transmission via electronic mail was consistent with the requirements of California Code of Regulations, title 20, sections 1209, 1209.5, and 1210. All electronic copies were sent to all those identified on the Proof of Service list above.

I declare under penalty of perjury that the foregoing is true and correct.

[signature]